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REMARKS

Reconsideration and further examination is respectfully requested.

Rejections under 35 U.S.C. § 103 (a)

Claims 1-39 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Busuioc et al. (hereinafter Busuioc) (U.S. 2001/0033551 A1) in view of Levandovsky et al. (hereinafter Levandovsky) (2002/0063915 A1).

Busuioc:

Busuioc describes, in the abstract, "... a distributed control system ... of co-operating intelligent software agents which individually have control, or responsibility for managing, one or more nodes of the communications network..." (Abstract) The software agents of Busuioc are of two types: Customer Agents (CAs) and Service Management Agents (SMAs). "Each CA ... is associated with a SMA ... and acts to negotiate between a GMSN customer and a SMA that might provide service to that customer..." (Busuioc, paragraph 68).

At column 75 Busuioc states:

"... Conveniently, there may be one software agent, a SMA 5, situated at each of the GMSN nodes 3, each SMA 5 monitoring its underlying switch 3 as well as the links 2 extended to the switch 3. Primarily, each SMA 5 controls just one switch 3 but any given SMA 5 has the ability to control a number of switches 3 simultaneously. That is, a SMA 5 is able to specify which incoming and outgoing communication links 2 a service will use..."

Busuioc states, at paragraph 79:

"Acting in a dynamically changing environment, a SMA 5 may evolve through various states 30. A state 30 is defined as an instance of agent's knowledge, created as a result of the agent's interaction with the physical environment and/or contact with other agents..."

Accordingly, in Busuioc the communication network is controlled by the SMA in response to knowledge that the SMA collects from other *agents*, including Customer Agents.

With regard to user input, Busuioc states, at paragraph 0108:

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"On receiving a customer request for a new service, the CA 6 matches it against the range of available services offered by the service provider and builds a service specification which is handed over to the SMA responsible for the source node for that particular service...."

Thus, client requests, entered at the user interface, are forwarded without authentication to the SMA.

Levandovsky:

Levandovsky describes a method for validating a path through a switched optical network, wherein a bit error rate for the path is determined. The path is validated or admitted into the network if the bit error rate is found to be within a predetermined range.

With regard to the Busuioc and Levandovsky combination of references, the Examiner states, at pages 3-4 of the office action:

"... Although the reference teaches MSN being any network that is capable of supporting a range of services (page 1, para. [0014]), the reference fails to teach explicitly teach optical communication network comprises an automatically switched optical/transport network (ASON), and wherein the UNI comprises an ASON UNI. The reference Levandovsky teaches optical communication network comprises an automatically switched optical/transport network (ASON), and wherein the UNI comprises an ASON UNI. (fig. 1, elements 110, 120, and 156, page 1, para. [0014]).

Therefore it would have been obvious to one having ordinary skill in the art at the time of invention was made to implement Busuioc's service agents, for solving the problem that is being faced in optics industry, as indicated by Levandovsky, the network is faced with the problem of delivering an acceptable level of performance for the connection, by configuring the Levandovsky's ASON with the readily available Busuioc's service agents..."

Examiner has failed to establish a prima facie case of obviousness

It is well established that to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify

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the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). The Examiner has failed to satisfy several of these criteria.

No motivation for modification suggested by the Examiner

The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). Applicants do not agree that such a suggestion can be found in the references.

The Examiner states that one would recognize the desirability of 'modifying Busuioc by employing the [a] switched optical network system of Levandovsky ' for solving the problem that is being faced in optics industry ... of delivering an acceptable level of performance for the connection...' Applicants disagree that the motivation for *the particular combination of references* exists.

Levandovsky, is directed to a method of "determining, selecting and validating a path/ connection through a switched optical network that is capable of delivering an acceptable level of performance that is efficient and economical..." Levandovsky teaches that a path is selected and admitted based on whether it has a satisfactory bit error rate. Applicants submit that there can

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only be found a motivation only for modifying Busuioc's path selection mechanism, rather than modifying the entire underlying signaling technology as alleged by the Examiner. Accordingly, because no motivation for the modification suggested by the Examiner can be found anywhere else besides in Applicant's instant specification, the rejection is improper and should be withdrawn.

Combination neither describes nor suggests the claimed invention

Claims 1-11:

However, even assuming that an argument could be made for the suggested modification, Applicants note that the combination of references fails to describe or suggest all of the elements of the claims. For example, claim 1 recites "...An optical service agent operating at an optical switched router for managing a service level agreement (SLA) for a user in an optical communication network, the optical service agent comprising ... a user-to-network interface (UNI) for interfacing the user with the optical communication network ... authentication logic for controlling access by the user to the UNI ... a peer-to-peer interface for interfacing with peer users; and optical service logic, coupled to the UNI and the peer-to-peer interface, for managing the optical communication network in accordance with said SLA for the user...."

Applicants note that Busuioc describes two agents; a CA agent and an SMA agent. The CA agent includes a 'user interface', but appears, as shown in Figure 1, to couple only to an SMA agent. Busuioc states, at page 3, paragraph [0068] "Each CA 6 is associated with a SMA 5 and acts to negotiate between a GMSN customer and a SMA that might provide a service to that customer..." Note that in Busuioc, the CA executes on different clients which are coupled to a service provider, and the SMA operates on a service provider. No mention or suggestion is made

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of any communication between CAs, and in fact Figure 1 expressly illustrates that communication exists only between a CA and an SMA. When reading Busuioc in context, this makes sense, as it is frequently desirable to separate clients that are serviced from a service provider, as generally clients enter into separate contracts with the SMA, and also require separation for security purposes.

With regard to the Applicants above argument, which has been previously made but is stated more clearly above, the Examiner describes at page 5 of the office action, that the 'service logic' is meant to be taught by the combination of CAs and SMAs. Applicants have amended to claims to more clearly indicate that the optical service agent, includes a UNI and peer to peer interface at an optical switched router... not distributed through the system as alleged by the Examiner.

No mention is made, in Busuioc, Levandovsky, or the combination thereof, of an agent having *both* a UNI and a peer-to-peer interface, as recited in the claims. For at least the reason that the references fail to teach or describe this limitation, the rejection is overcome and should be withdrawn. Dependent claims 2-11 serve to add further patentable limitations to claim 1, and are allowable for at least the reasons put forth above with regard to claim 1.

Claims 12-23:

Claim 12 recites "...An optical switched router comprising a user application requiring a communication service from an optical communication network, the communication service having an associated service level agreement (SLA) ... authentication logic for controlling access by the user application to the communication services of the optical communication network; and

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an optical service agent for managing the optical communication network to provide the service at the associated service level agreement (SLA) to the user application, wherein the optical service agent comprises ... a user-to-network interface (UNI) for interfacing with the optical communication network ... a peer-to-peer interface for interfacing with peer users; and optical service logic for interacting with the optical communication network via the UNI and with the peer users via the peer-to-peer interface for managing said SLA for the user application....”

In contrast to providing ‘an optical service agent for managing the optical communication network to provide the service at the associated service level agreement (SLA)...’ applicant notes that Busuioc teaches the use of two discrete agents; a CA and an SMA, each of which performs distinct services at different locations in the network and attempts to meet the needs of the clients that they service (i.e., the CA deals with client requests, the SMA deals with service provider issues, and ultimately has the final say). For at least the reason that the combination of references fail to describe several of the limitations of the claims, it is respectfully requested that the rejection be withdrawn.

Dependent claims 14-23 depend upon claim 12, add further patentable limitations to claim 12 and are allowable for at least the reasons put forth with regard to claim 12. Thus it is requested that the rejection of these claims also be withdrawn.

Claims 24-34:

Claim 24, as amended, now recites “...A system comprising ... an optical communication network comprising a plurality of optical switched routers, *wherein each optical switched router includes an optical service agent includes a user-to-network interface (UNI) for interfacing with the optical communication network and a peer-to-peer interface for interfacing with peer optical*

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*switched routers ... a first network user coupled to the optical communication network via the user-to-network interface (UNI) of an optical switched router for obtaining optical communication services from the optical communication network in response the input from the first network user at a user-to-network interface (UNI) and for managing a service level agreement (SLA) for the first network user; and authentication logic for authenticating requests from the first network user for managing the service level agreement (SLA)..."*

In contrast to providing an optical service agent which includes a user-to-network interface (UNI) for interfacing with the optical communication network and a peer-to-peer interface for interfacing with peer optical switched routers... Applicant notes that Busuioc teaches the use of two discrete agents; a CA and an SMA, each of which performs distinct services at different locations in the network and attempts to meet the needs of the clients that they service. For at least the reason that the combination of references fail to describe several of the limitations of the claims, it is respectfully requested that the rejection be withdrawn.

Dependent claims 25-34 depend upon claim 24, add further patentable limitations to claim 24 and are allowable for at least the reasons put forth with regard to claim 24. Thus it is requested that the rejection of these claims also be withdrawn.

#### Claims 35 - 38

Claim 35 has been amended to add structural relationship to the method steps previously recited, wherein the structural relationship highlight the distinctions between the claimed invention and the combination of references as described above. Thus claim 35, as amended, now recites "...A method for managing service level agreements in an optical communication system *at an optical switched router*, the method comprising at least one of ... authenticating a

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request for communication services *at a user-to-network interface (UNI) of the optical switched router*, the request including a service level agreement (SLA) ... monitoring and analyzing the connection in real-time for determining SLA *compliance using a peer-to-peer interface of the optical switched router* ... gathering and maintaining statistical information relating to a connection ... analyzing the statistical information off-line for determining SLA compliance, patterns, and trends ... interacting with a service provider via the peer-to-peer interface to enforce penalty provisions in the SLA ... interacting with a service provider via the peer to peer interface to negotiate a credit for services not provided by the service provider in accordance with the SLA ... interacting with a service provider via the peer-to-peer interface to negotiate "replacement" services for a breach of the SLA ... interacting with various network elements to rectify a breach of the SLA ... interacting with the service provider to dynamically modify the SLA based upon changing user requirements; and interfacing with a billing/accounting system to provide SLA-related information.

Accordingly, for reasons similar to those described above with regard to independent claims 1, 12 and 24, Applicants submit that the claims 35-38 are patentably distinct over the combination of Busuioc and Levandovsky, and request that the rejection be withdrawn.



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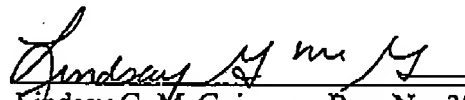
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Applicants have made a diligent effort to place the claims in condition for allowance. However, should there remain unresolved issues that require adverse action, it is respectfully requested that the Examiner telephone the undersigned, Applicants' Attorney at 978-264-6664 so that such issues may be resolved as expeditiously as possible.

For these reasons, and in view of the above amendments, this application is now considered to be in condition for allowance and such action is earnestly solicited.

Respectfully Submitted,

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Date

  
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